
A Priority Rating System for Public Health Programs

DOUGLAS VILNIUS, MS, MPA
SUZANNE DANDROY, MD, MPH

The authors are with the Utah Department of Health. Mr. Vilnius is Director, Division of Community Health Services, and Dr. Dandroy is Executive Director of the Department. She is also Adjunct Professor, Department of Family and Preventive Medicine, University of Utah.

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Tearsheet requests to Douglas Vilnius, Division of Community Health Services, Utah Department of Health, P.O. 16660, Salt Lake City, Utah 84116-0660.

Synopsis

When resources are limited, decisions must be made regarding which public health activities to undertake. A priority rating system, which incorporates various data

sources, can be used to quantify disease problems or risk factors, or both.

The model described in this paper ranks public health issues according to size, urgency, severity of the problem, economic loss, impact on others, effectiveness, propriety, economics, acceptability, legality of solutions, and availability of resources. As examples of how one State can use the model, rankings have been applied to the following health issues: acquired immunodeficiency syndrome, coronary heart disease, injuries from motor vehicle accidents, and cigarette smoking as a risk factor. In this exercise, smoking is the issue with the highest overall priority rating.

The model is sensitive to the precision of the data used to develop the rankings and works best for health issues that are not undergoing rapid change. Cost-benefit and cost-effectiveness analyses can be incorporated into the model or used independently in the priority-setting process. Ideally, the model is used in a group setting with six to eight decision makers who represent the primary agency as well as external organizations. Using this method, health agencies, program directors, or community groups can identify the most critical issues or problems requiring intervention programs.

PUBLIC HEALTH AGENCIES, like all governmental services, never have adequate resources to address the needs of all constituents. Over time, the resource pendulum may swing, but most who pursue public health funding through the political process would agree that major distinctions between the good and bad times are based on relative degrees of "lean," "leaner," or "devastating." Such is the environment in which scarce public resources must be competed for among vast and growing social needs.

The competition for resources mandates that public health decision makers seek methods and apply skills that produce efficient and effective outcomes. State legislators, local boards of health, city and county commissioners, and taxpayers occasionally demand and certainly deserve public health programs and services which maximize cost-effective and cost-beneficial public health outcomes. What methods and tools are available to public health administrators and managers that enable them not only to do things right but, even more important, to do the right things?

There seems to be reasonable consensus within the public health community that prolonging productive life

is a societal value that has been adopted as part of the public health mission. The reduction of pain and suffering is another generally accepted goal of public health. However, further clarification of the mission and goals may become clouded by politics, ethics, economics, and public opinion. Life satisfaction, quality of care, confidentiality, access to care, blaming the victim, the right to die, and cost containment are issues tied to societal values that affect health decision making in the 1990s. What, if any, effect do these issues have on public health's mission, and how are their implications translated into information upon which decisions and priorities can be based?

A Decision Making Model

There is no "one best way" to set public health priorities. What is essential, however, is that a process or method be adopted that is systematic, objective, and allows for a standardized comparison of problems or alternatives that incorporate the scrutiny of science and the realities of the environment. One approach to this challenge is a methodology which attempts to consoli-

Table 1. Problem size ratings for selected health problems on a scale of 1–10

Problem	Incidence/prevalence		Mortality		BPR score
	Rate ¹	Scale	Rate ¹	Scale	
AIDS	11.2	2	3.9	0	1
CHD.....	3,058	6	313.4	4	5
MVI	176	4	18.0	2	3
Smoking	10,006	8	44.1	2	5

¹ per 100,000 population.

NOTE: AIDS = acquired immunodeficiency syndrome; CHD = coronary heart disease; MVI = motor vehicle injury requiring hospitalization.

date these factors into a process having a quantifiable outcome. That model, Basic Priority Rating (BPR), (1, 2) applies a defined problem or issue to a set of criteria that rate the size and seriousness of the problem, the effectiveness of potential interventions, and a reality test of miscellaneous items. The resulting process produces a quantifiable value for each problem being analyzed, thus providing a basis for priority setting. The BPR formula is as follows:

$$[(A + B) C] \div 3 \times D = BPR$$

where *A* equals the size of the problem, *B* the seriousness of the problem; *C* the effectiveness of intervention, and *D* equals propriety, economics, acceptability, and legality, known as "P.E.A.R.L." We shall now describe the model and its use with specific examples.

Defining the problem. Decision makers who engage in problem solving can conserve considerable energy by constructing clear statements of problems. Many frustrating hours and lost opportunities have resulted from an imprecise definition of a problem. Is the problem a dysentery outbreak or a contaminated water supply? Is the problem that people are dying from heart failure at an old age or prematurely, or is the problem better defined by lifestyle practices that lead to heart disease? A clear statement of the problem will not only provide a consensus for direction among those engaged in the priority-setting process, but it will also establish a basis for concise objective setting if, and when, the problem is identified as a priority for which planning, intervention, and evaluation are necessary.

If the link between risk factors, health status conditions, and mortality is recognized, each risk factor or each cause of illness may be considered as a problem. Four potential problems—the incidence of acquired immunodeficiency syndrome (AIDS), motor vehicle injuries requiring hospitalization (MVI), coronary heart disease (CHD), and cigarette smoking (smoking)—will be analyzed to illustrate the application of BPR. The nature of priority setting and decision making often

involves choices among a variety of conditions requiring a public health response, thus further complicating the decision making process. Consequently, care should be taken to arrange problems by category, such as disease and accidents, risk factors, and target populations, before the analysis begins. In our example, we will, for illustration only, be comparing three direct causes of morbidity and mortality (AIDS, MVI, and CHD) and one risk factor (smoking), using both national and Utah data.

Size of the problem. The size of a health problem is most often represented by incidence or prevalence rates in 100,000 population segments. These rates are specific to disease and nondisease conditions, such as 176 motor vehicle injuries per 100,000; 10,006 cigarette smokers per 100,000; 11.2 AIDS cases per 100,000; 3,058 heart disease cases per 100,000.

Disease specific morbidity data are often difficult to obtain compared with the relative ease of acquiring cause of death information. Most information on disease incidence emanates from hospitals and physicians as a record of treatment and payment. Few States have a morbidity registry that provides a centralized source for disease and injury data, unless the diseases are considered communicable. Therefore, finding reliable data to compare relative problem incidence-prevalence may prove to be a difficult task. Lifestyle risk factor data, on the other hand, are being collected on a regular basis by the majority of States through the Behavioral Risk Factor Survey (3).

Mortality rates may also be applied to the process of rating the problem size and, like the incidence and prevalence rates, are presented per 100,000 population, for example, 313.4 CHD deaths per 100,000. These data are easily obtained from State health department offices of vital records and traditionally play a major role in determining public health priorities.

The BPR model suggests the following scale for scoring relative rate ranges:

Incidence or prevalence per 100,000 population	Score (1)
50,000 or more	10
5,000 to 49,999	8
500 to 4,999	6
50 to 499	4
5 to 49	2
0.5 to 4.9	0

Depending on the magnitude of problems being considered, the scale may require adjustment to compensate for lower incidence or prevalence rates.

In table 1 we apply this rating scale to the four problem conditions being analyzed. Smoking and CHD warrant the highest ratings for problem size, while AIDS scores the lowest.

Seriousness of the problem. A health problem's seriousness is defined by four factors in the BPR model: (a) urgency, (b) severity, (c) economic loss, and (d) impact on others. Each factor should be evaluated on a per case basis only. Readily identifiable and accessible data sources are not available for ranking problem seriousness. The analysis of each seriousness factor will require a considerable degree of investigation in order to obtain quantifiable data. Some factors related to the problem under consideration may require literature searches, while other factors may require the decision making group's best guess.

As each seriousness factor is applied, it is important to keep its analyses independent of the other factors, both within the seriousness category as well as the other categories. For example, when assessing the severity of AIDS, the analysis should be undertaken without regard for the size or economic loss of the AIDS problem. This principle of independent assessment within criteria and factor should be applied throughout the process. Each of the four problems is rated according to the four factors that define seriousness in the model.

1. *Urgency.* Some problems require a rapid response in order to prevent the spread of the problem or death as, for example, in a spill of radioactive waste, contaminated food, or a rabies outbreak. In BPR we use a 0-5 scale for each factor within the seriousness category. Since there is no clearly defined data source for these ratings, one must rely on a combination of scientific knowledge and public opinion. The four problem areas under consideration and their relative urgency ratings, using a scale of 0-5, are:

<i>Problem</i>	<i>Rating</i>
AIDS.....	3
CHD.....	1
MVI.....	2
Smoking.....	0

AIDS receives the highest urgency rating, while smoking rates lowest of the four problems.

2. *Severity.* Severity is a major factor which frequently drives public health programs. Hence, the severity of a disease, injury, outcome, or event is often the key to health program decision making. AIDS, chronic obstructive pulmonary disease, diarrhea from *Salmonella*, measles, spinal cord injuries, and low birth weight babies present varying levels of severity. How should one rate these conditions on a scale ranging from 1 to 5?

What factors determine severity? Certainly the case fatality rate (CFR), which measures the proportion of those with a disease who die from it, would be the ulti-

Table 2. Problem severity ratings by averaging case fatality rate (CFR) and years of potential life lost (YPLL) for selected health problems, on a scale of 0-5

<i>Problem</i>	<i>CFR</i>	<i>Rating</i>	<i>YPLL per case</i>	<i>Rating</i>	<i>Total average rating</i>
AIDS.....	1.00	5	35.0	5	5
CHD.....	.06	3	13.3	3	3
MVI.....	.10	3	43.7	5	4
Smoking004	1	1.9	0	0.5

NOTE: AIDS = acquired immunodeficiency syndrome; CHD = coronary heart disease; MVI = motor vehicle injury requiring hospitalization.

mate measure of severity. Rabies, for instance, has a CFR of 100 percent.

An additional severity index important to priority-setting is based on deaths which are deemed premature, that is, before age 65. Premature mortality is represented by years of potential life lost (YPLL) for persons dying before age 65 within a specific disease category (4). Hence, motor vehicle fatalities generate more years of potential life lost per case than heart disease because motor vehicle deaths generally occur at younger ages. For the purpose of severity assessment, consideration of YPLL should be limited to its face value and not include aspects of economics related to productivity, a subject to be addressed at another juncture in BPR.

In addition to CFR and YPLL, there are certain "conditions" or "states of being" which warrant severity consideration because they affect the quality of life. Arthritis, blindness, and spinal cord injury would be examples of such conditions. Because hard data to measure the severity of a disability or condition are frequently nonexistent, the information and experience of the decision making group and their personal assessments of the problem often determine the ranking of this factor.

Risk factors may also be considered legitimate measures of severity. Considering the fact that the risk of dying from lung cancer is 23 times greater for males who smoke 40 cigarettes per day than for male non-smokers (5), does cigarette smoking warrant a severity rating? Is its rating higher because smoking is also associated with other cancers, chronic obstructive pulmonary disease, and vascular disease? How should one rate smoking versus unsafe sex versus sedentary lifestyle?

Because quality of life conditions and risk factors are difficult to quantify with respect to seriousness, we have limited our severity ratings to CFR and YPLL (table 2). Thus, AIDS is the most severe problem and smoking the least severe.

A decision making group may choose to weight these subfactors differently. Note that the scale considered for

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each subfactor can greatly influence the outcome of the ratings. Should AIDS, with a CFR nearly six times that of CHD, proportionally establish the subfactor scale, thus relegating all other problems proportional to AIDS and resulting in CHD perhaps receiving a score of 0 or 1? The application of a scale with a range based more on a pre-determined standard, versus relative comparisons, as indicated previously, is another option. There is no hard and fast rule as to what procedure to follow. If the relative scale is used, it is possible to achieve a total score for seriousness of 20 points. If the problem size score warranted a 10, a seriousness score of 20 implies that seriousness warrants twice the weight of problem size, which may or may not be valid.

3. *Economic costs.* The economic aspects of a problem should include the costs of medical expenses, public services, and prevention programs to the community, to the person or the family or all three. Although these costs can, and later will, be applied to the aggregate problem as identified in problem size, at this point the costs should be addressed on an individual case basis.

There is no one central source for average case costs, although some publications provide cost information that could be used in the absence of State or local data (6-8). If at all possible, costs should be adjusted to a given year's dollar value if cost data are based on different years for different problems.

Both direct and indirect costs, if available, should be applied.

Cost estimates by case for each study problem, using a scale of 0-5, would be

Problem	Case cost per year	Rating
AIDS	\$50,151	5
CHD	8,700	2
MVI	45,500	5
Smoking	643	1

Again, the decision to use a standard versus a relative scale arises. Based on the cost information considered,

AIDS and MVI warrant the highest rating and smoking the lowest.

4. *Impact on others.* A basic principle upon which public health was established is that society has legitimate concern over individual actions or conditions that may affect many. Communicable disease control remains an important agenda for public health today, but the concept of effect on others has been expanded to include water and air pollution, toxic waste spills, passive smoking, and alcohol use by pregnant women.

Economic loss and the cost to society also may be considered as impacts on others, even when the outcome of one person's disease or behavior may not directly affect others. Legislation mandating use of seat belts and motorcycle helmets has been passed partially because of high insurance rates and increased Medicaid costs for injuries.

The BPR attempts to capture the effect of health problems on other persons in a quantifiable manner. The decision maker is asked to consider the problem's potential and its actual effect on others, as in the case, for example, of the effect of suicide on a family, or the transmission of AIDS, or drinking while driving.

Data for this category may be found in a variety of sources, based on probability of infection per exposure, such as, for example, measles exposure in an 80-percent immunized school population; the probability of contracting lung cancer over time as a result of exposure to cigarette smoke; or the probability of spouse abuse in a given population of alcoholic men. These data are not easily linked, however, in the midst of a variety of public health problems and may require considerable interpretation and assumption. Once again, the process requires consideration of the problem on a case basis. The preferred scale is 0-5, but the decision maker may choose a standard or relative scale. The following ratings, using a scale of 0-5, indicate that AIDS has the greatest impact on others, while CHD has the least impact.

Problem	Rating
AIDS	5
CHD	1
MVI	3
Smoking	2

Summary of seriousness criteria. The ratings of each of the four factors comprising the seriousness category are totalled in table 3. Based on the factors considered in the process, AIDS is rated most serious, followed by motor vehicle injuries, coronary heart disease, and smoking.

Effectiveness of interventions. Some public health

problems seem more easily resolved than others, such as, for example, measles versus AIDS, or smoking versus obesity. The difficulty of educating intravenous drug users, combined with the lack of a vaccine or curative drugs, places AIDS in a less favorable intervention position than dental cavities, for instance. An effective intervention, like measles vaccine, may not eliminate a local disease outbreak if less than 80 percent of the targeted child population receive the vaccine. A proven worksite blood pressure control program may be poorly attended if the workers have confidentiality concerns. Thus, the BPR model recognizes effectiveness of intervention at two levels: (a) the overall success of the method to be employed and (b) the degree to which the targeted population will respond.

Locating information concerning effectiveness of programs and receptivity of a target audience requires an extensive literature search. Occasionally, reports or journals present research summaries for select programs, such as school health (9), smoking cessation (5), or worksite health promotion (10). The pursuit of information concerning effectiveness of intervention related to problem areas requires more energy than any other BPR category. The decision maker, however, must commit time to this critical area if the priority-setting process is to be viable and productive. If a manager has only limited knowledge of intervention options or over-estimates the efficacy of a particular method, time and resources will be devoted to misplaced or improperly considered interventions, and public confidence may be lost. Considering the degree to which this category influences the final rating of the problem under analysis, effort must be made to bring to the decision making table well-researched information on program efficacy and acceptability by the potential target group. The process can be facilitated by assigning the data-gathering task to agency experts within their area of expertise.

In ranking the problem areas for effectiveness of interventions, both rating factors, efficacy and target potential, are equally ranked on a percentage basis and multiplied for a total score. For instance, if an intervention approach is 50 percent effective and reaches 80 percent of the target, the overall effectiveness is $0.5 \times 0.8 = 0.4$, or 4 on 0-10 scale. Smoking is determined to be the problem area with the greatest likelihood of applying successful interventions to the target population (table 4). Approaches to AIDS intervention are estimated to be least effective.

P.E.A.R.L.

The last BPR category to be applied to the decision-making process involves five miscellaneous factors fre-

Table 3. Summary of problem seriousness ratings, by adding subfactors, for selected health problems, on a scale of 0-20

Problem	Urgency	Severity	Economic loss	Impact on others	Total score
AIDS	2	5	5	5	17
CHD	1	3	2	1	7
MVI	3	4	5	3	15
Smoking	0	0.5	1	2	3.5

SOURCE: Utah Department of Health.

NOTE: AIDS = acquired immunodeficiency syndrome; CHD = coronary heart disease; MVI = motor vehicle injury requiring hospitalization.

Table 4. Effectiveness ratings of problem interventions, by multiplying program efficacy and target potential, for selected health problems, on a scale of 0-10

Problem	Program efficacy percentage	Target potential percentage	Total score
AIDS	30	30	.9
CHD	50	70	3.5
MVI	40	60	2.4
Smoking	60	90	5.4

NOTE: AIDS = acquired immunodeficiency syndrome; CHD = coronary heart disease; MVI = motor vehicle injury requiring hospitalization.

Table 5. Summary of Basic Priority Ratings by problem and rating category, for selected health problems

Problem	Problem size ¹ A	Seriousness ² B	Intervention effectiveness ³ C	P.E.A.R.L. ³ D
AIDS	1	17	.9	1
CHD	5	7	3.5	1
MVI	3	15	2.4	1
Smoking	5	3.5	5.4	1

¹Scale 0-10.

²Scale 0-20.

³Scale 0 or 1.

NOTE: AIDS = acquired immunodeficiency syndrome; CHD = coronary heart disease; MVI = motor vehicle injury requiring hospitalization.

quently overlooked when setting public health priorities. The factors—propriety, economics, acceptability, resources, and legality, known collectively as P.E.A.R.L.—are critical to the process. P.E.A.R.L. factors are scored either “yes” or “no.” A “yes” response to any factor warrants a score of “1.” A “no” response receives a score of “0.” The scores are multiplied and the product will be either “1” or “0” for the entire category.

1. *Propriety* asks whether the program is suitable and falls within the health agency’s overall scope of operation or mission. Occasionally an agency finds itself considering priorities which are imposed on it by outside sources or higher authorities but which are inconsistent with its goals and expertise.

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2. *Economics* asks if it is economically advisable to address the problem. This is an opportunity to evaluate and consider the economic merits of addressing each problem or issue, a critical aspect of decision making.

3. *Acceptability* requires that the community be willing to accept the program and view it as necessary. The community, in this case, represents a broad spectrum and includes the target population, supporting agencies, the general public (taxpayer), and the State legislature or local authorities.

4. *Resources* asks whether funding is available to pay for the program. The decision maker might be tempted to consider a "yes" response to this factor from three perspectives: (a) the agency has the funds at hand to support the anticipated program, or (b) without a committed allocation for the program, the agency is able to fund it at the expense of other activities, or (c) the agency deems the program sufficiently important to pursue additional funds to support its implementation. The third option probably should not be considered unless the time frame for decision making and implementation allows time to explore additional resources. The nature of priority-setting pragmatically dictates that the decision maker(s) be prepared to sacrifice some programs for others of higher priority.

5. *Legality* implies that an agency has the legal authority to pursue programs to solve the problem being considered. Do State statutes or local ordinances allow a county to prohibit smoking in restaurants or provide anonymous AIDS testing? A negative response to this question does not necessarily lessen the priority of the problem, but the intervention may have to be re-framed based on legal authority or sanctions.

BPR results—applying the formula. The scores on each of the four basic rating categories are summarized in table 5 for the four issues used as examples. The four rating categories are identified by the letters A, B, C, and D in the equation and the resulting scores have been applied to the BPR formula. According to the results (table 6), smoking ranks first with a score of

15.3, followed by MVI (14.4), CHD (14.0), and AIDS (5.4).

Discussion

Is the BPR more guess than science? The strength of the data applied to the process certainly influences the rankings. Hard data are impossible to obtain for all categories and factors. However, with a serious time commitment dedicated in advance to data gathering and literature search, decision making will be greatly enhanced when it is time to apply the BPR model to the data. Some problems have been researched more extensively than others. Smoking, for instance, will yield greater intervention efficacy information than will AIDS.

The BPR process is likely to be enhanced by a group approach rather than by one or two decision makers. It is suggested that both in-house and external representatives be included within a BPR group. These persons should represent groups affected by the outcome of the process, such as professional associations, voluntary health agencies, State and local advocacy coalitions, and government agencies. Ideally, the group should not exceed six to eight in number to maximize full participation and coordination. A larger group is likely to create a barrier to efficiency and consensus development.

The BPR process includes for each category and factor weighted values which may be subject to modification based on the needs and values of the decision maker(s). For instance, seriousness has the potential to have twice the weight of problem size, and P.E.A.R.L. is scored either all or none. Effectiveness has been established as the numerator multiplier when some may contend that problem size or seriousness should warrant this position. It is suggested that the formula remain intact for the first ranking experience and, upon review of the results, the group reconsider and adjust the weighting factors as needed.

As a group considers BPR for the first time, members will likely need time to "get their bearings" as they become familiar with the process. Afterwards, the process will progress more efficiently to the degree that reliable information is available to the group. A facilitator should "dry run" one or two problems with staff members to get the feel of the process before bringing the entire group together.

The same factor should be applied to each problem rather than moving down through each factor by problem. For instance, problem size considerations should be applied to AIDS, CHD, MVI, and smoking before seriousness is applied. This will allow the BPR members to establish individual and group standards which

can be uniformly applied throughout the process. The group, in becoming familiar with the process, will tend to reconsider its positions or standards as it moves from problem to problem. The participants should be encouraged to revisit previous scores and revise their standards for interpreting process elements.

The study problems considered—AIDS, CHD, MVI, and smoking—were selected to provide an understanding of how a cross section of conditions can be analyzed. In reality, the problems considered by any one group of people are likely to be more homogeneous, as, for example, all communicable diseases, injuries, risk factors, chronic diseases, or selected environmental pollution concerns.

An important limitation of BPR is its inability to address the changing nature of a problem. The process requires that the problems “stand still” for a group snapshot. Current and past information shed light on the subject; for the most part, the photo subjects do not move dramatically from year to year, at least not enough to blur the image. To some extent, the urgency factor attempts to address problems requiring immediate responses but does not address problems that are rapidly changing or may have future urgency. AIDS is an example of a problem with dramatic potential to change from year to year. The calculations concerning problem size, economic loss, severity, and effectiveness of interventions quickly will become obsolete. For instance, the availability of an effective AIDS vaccine will influence the effectiveness score just as new cases increase the problem size score from year to year. Direct costs for AIDS patient care may decrease as better drugs become available. In lieu of incorporating a “stability score” within each category or factor, decision makers may choose to include projections within their analysis of those problems anticipated to change radically.

An important aid for making decisions about program priorities is cost-benefit analysis and cost-effectiveness analysis (CBA–CEA). The application of these tools to public health priority setting is particularly warranted as we raise the question of whether prevention programs offer a better return on the taxpayer’s dollar than does traditional medical care treatment. The BPR model barely addresses CBA–CEA to the extent recommended by health economists (11, 12).

Accurate benefit-cost ratios which indicate the degree of return received for every dollar spent on the problem are important data for decision making. Such data, applied to BPR, might take the form indicated in table 7. Dollar values are assigned to human life and pain and suffering, as well as lifetime earnings. A benefit-cost ratio of 1.3 for AIDS implies that for every dollar invested in the AIDS problem, a savings of 1.3 dollars is realized.

Table 6. Final BPR scores and priority rankings, for selected health problems

<i>Problem</i>	<i>BPR score¹</i>	<i>Ranking</i>
AIDS	5.4	4
CHD	14.0	3
MVI	14.4	2
Smoking	15.3	1

¹ Formula: $[(A+B) C \div 3 \times D = BPR]$

NOTE: AIDS = acquired immunodeficiency syndrome; CHD = coronary heart disease; MVI = motor vehicle injury requiring hospitalization.

Table 7. Benefit-cost ratios and ratings of interventions for selected health problems on a scale of 1–10

<i>Problem</i>	<i>Benefit-cost ratio</i>	<i>Rating</i>
AIDS	1.3	1
CHD	2.9	6
MVI	2.7	6
Smoking	3.6	10

NOTE: AIDS = acquired immunodeficiency syndrome; CHD = coronary heart disease; MVI = motor vehicle injury requiring hospitalization.

The results could be incorporated within the BPR, or applied to the BPR, once priorities are established. If all data having direct application to CBA–CEA, such as direct and indirect costs, lost productivity, and YPLL, are applied within the BPR formula, they would have to be excluded from previous criteria and applied to a CBA–CEA factor, $B \div C$. This revised formula represents one approach to incorporating $B \div C$ into the BPR formula.

$$(A+B) [(C+B \div C)] \div 6 \times D = BPR$$

Again, how much data are necessary to make good program decisions? The task of obtaining benefit-cost or effectiveness-cost ratios requires considerable expertise and investment in time. Each agency must make its own choice as to how many resources should be devoted to gathering data for BPR and for the BPR process. The original intent of BPR was to provide a decision making tool that would not frighten away potential users by demanding excessive investments in data gathering resources.

Public health professionals frequently are frustrated by organizational focus or structure or both, and attempts to set priorities among varied categories of problems may add to that discord. For instance, should public health goals and objectives be driven by mortality, morbidity, or risk factors? Should public health efforts be organized around diseases or risk factors? Or should target groups, such as students, employees, senior citizens, or minorities, be the focus? Considering

the delayed nature of a risk factor's ability to impact disease or mortality, should public health, even in the short term, adopt risk factors as the basis for its objectives? These issues become more focused as risk factor data from the Behavioral Risk Factor Surveillance System (BRFS) become available to more States.

As the study problems reveal, cigarette smoking fares well when the BPR system is used. Program effectiveness is often better documented by risk factor than by disease or injury conditions, because changes in risk factors can be documented much earlier than changes in disease incidence. Even though risk factors do not warrant high severity scores on a par with disease or injury outcomes, the results of interventions on risk factors reinforces the considerable influence of the effectiveness category on BPR scoring. To enhance the accountability of public health programs, objectives should be developed around lifestyle factors which can be monitored and evaluated by the Behavioral Risk Factor Survey and other data sources. Consideration should be given to granting risk factor data the same status as morbidity and mortality data.

Conclusion

It is unlikely that setting health and human service priorities will ever be approached from a standard that is void of caring and sensitivity, and we would caution against ignoring such factors. The use of data, however, must be the most essential component of sound decision making. The calls to assessment and accountability voiced by the Institute of Medicine in its report on the future of public health (13), in the Public Health Service's Year 2000 Objectives for the Nation (14), and the Health Objectives 2000 Act (15) suggest that public health professionals reevaluate priorities. The BPR, with its reliance on data, can be a valid decision making tool in spite of its being less than pure science. If BPR is not used because it needs information which requires quantification and is difficult to retrieve, one might question whether this is a deficit of the model or a challenge to the potential user to consider developing local information sources that allow for more precise data upon which to make decisions.

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